ELECTRICITY ON THE FARM *Magazine*

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Halter breaking calves is now done mechanically. This device teaches them to lead without argument. See page 7.

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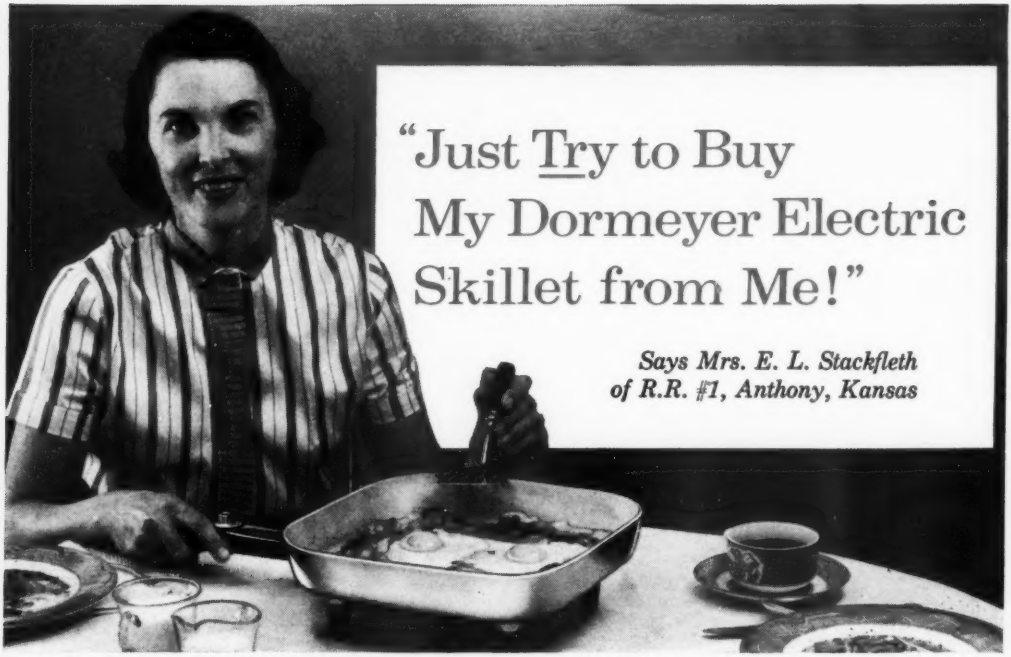
OUR 30th YEAR — THIS ISSUE 827,000 COPIES



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Editor's Chat

MAKE YOUR HOME A HOBBY

Probably there are very few who need any encouragement in fixing up their home as much as the budget will permit. But modern electrical appliances and home furnishings are coming from the factories and are pictured in the ads in such profusion that home building and homemaking have become almost a national hobby. Everyone wants to "get into the act". Far be it from us to do anything but foster and promote such a worthy project.

There is probably no way one can invest a dollar and get so much satisfaction in return than by putting it into things you can see and use every day in the home. A modern kitchen and laundry, air conditioning, TV and radio, automatic heating and water supply, garbage disposal, and a hundred other things all help make housekeeping and homemaking fun and a hobby that everyone can enjoy.

Everyone should have a hobby and we can think of no better one than making your own home as nearly perfect and up to date as you can. To make your house a "home", make it your hobby.

DRY IS DRY

This is a rather dry subject but one of increasing interest and importance. Man has made some progress in producing rain by seeding the clouds. And he has improved methods of storing water for irrigation and other uses. But continuing progress involving methods of water conservation are absolutely necessary to prevent more widespread *water starvation.*

On the other hand no one has come up with any bright ideas on how to make it stop raining when you don't want it or have too much. Up to very recent times there has been little advance in this science beyond an umbrella or a roof. And the prospects for finding a practical method to stop rain are not bright. The next best if you can not prevent nor avoid an evil is to find a remedy.

And that we now have, when it comes to preventing damage rain might cause. It is crop drying and if you have not given this modern method of drying hay and grain any serious thought it is high time you did. The theory is good, it has worked out well in practice and few farmers can afford to be without this sort of protection.

It might be a good idea to practice some crop drying. That is unless you have some system for preventing rain.

TAKE A LOOK

Take a look around you and see what the young folks are doing. It will surprise and probably inspire you. It has been our good fortune to visit a number of Vo-Ag classes and 4H meetings and we came away with renewed confidence in the future of farming and the future of America. The same energy and imagination that too often leads to mischief can, when properly directed, result in an amazing collection of useful articles made in the school shop or at home.

In addition to the *lift* it will give you to visit with the young folks and see what they are doing, it is a great help and inspiration to both the teachers and the youngsters to have someone pay them a visit and show some interest in what they are doing. It works both ways and is an opportunity too many of us overlook. So try it and "Take A Look".

Jim Ridout

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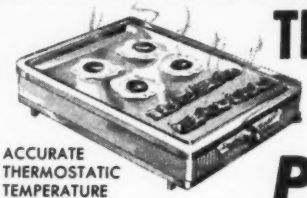

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TAKE YOUR COUPON TO YOUR *Kelvinator* DEALER

Division of American Motors Corp. Detroit 32, Mich.

Barn cleaner unit in bottom of silo carries silage to incline chain elevator. Elevator carries it up to overhead shuttle conveyor above feed bunk. Feeder is sheltered from weather by roof.

From Bunker to Feeder Without Pitching

Flip a switch and unload automatically

George Dynes' place is located near Mount Vernon in Washinton state. Until he built a trench silo with a built-in mechanical unloading system, feeding silage to his big Guernsey herd was just about a full-time job for one or more hired hands. A herd can eat up a good many tons of silage in the course of a season and handling the stuff twice runs it into a messy, time-consuming task.

Now there's not much to it. The only actual hand-work involved is switching on three electric motors and occasionally getting down in the trench and forking silage over into the unloader from the sides and corners.

Barn Cleaner Units Used

Dynes' setup consists of two shuttle-stroke power conveyors, one unit in the bottom of his trench silo and the other above the feed bunker, and a short endless chain elevator connecting the two. These units are in operation for two 10-minute periods daily to move the silage to some 50 head of Dynes' herd of milk cows.

The 350-ton silo is half trench, half bunker and has concrete walls and floor. It is 80 ft long, 10 ft deep, 18 ft wide at the bottom and 22 ft at the top. It is built into the sloping hillside behind Dynes' dairy barns. Extending in the same line, immediately below it, is the roofed-over feeding bunk.

An 18-inch gutter, containing the shuttle-stroke unit, runs down the center of the silo floor. The motor for this unit is housed under a concrete slab between the end of the silo and the feeding bunk.

Short lengths of 2 in by 12 in lumber were used to cover the gutter when the trench silo was filled. As the silage is fed out, the 2 by 12's are removed, one by one, as the stack decreases. Some of the silage from the outer corners must be kicked or pushed into the gutter manually.

A 1 hp, endless-chain type conveyor with angle iron flights carries the silage from the end of the trench silo up and above the feed bunk. From this point it falls onto a second shuttle-stroke unit mounted in an open wooden gutter built over the manger. The silage is carried down the length of the 80 ft bunk and dropped through evenly spaced openings into the manger. Each stroke carries the silage along until the feeder is completely filled.

The two shuttle-stroke units are each powered by a 3 hp electric motor. That's plenty of power, but the operating costs are negligible, according to Dynes.

The installation saves a lot of labor, both in filling and emptying the silo, and that is the chief reason why Dynes likes it so well. Last summer, a three-man crew put up the 350 tons of silage in the new concrete trench silo.

Dynes estimates that the labor costs he is saving will pay back his investment in a matter of just a few seasons. □ □

Save $7.00 Per Ton on Feed Processing

Plan your system so as to eliminate all unnecessary handling

By **LOWELL D. OVERMYER**

For years the common method of processing feed on the farm was to load the grain on a wagon, haul it to a shed where the feed mill was located and shovel the load into the mill. Since it took so much time to handle the ingredients, the only way to save time was to use a lot of power and cut down grinding time. This theory on power application did not lend itself to using electric motors as a source of power. Likewise, hand-fed mills powered by 5 or 7½ hp single phase motors were quite time consuming.

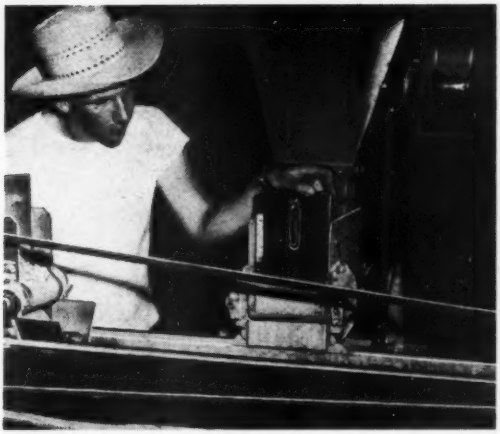
Clarence J. Lavy, an Ohio farmer, who with his sons feed 1200 to 1500 head of hogs a year, wanted to make farm feed processing practical and completely mechanized. At the same time he wanted to do it with electric power. He examined a completely automatic system, then adapted equipment to semi-automatic operation and his own situation. One 5 hp and three ¼ hp motors turn out feed at the rate of 2500 lbs. per hour, all by pushing a button.

Shelled corn and either oats or barley are stored in two overhead hopper bottom bins. Protein concentrate is handled in 100 lb. bags, but a 4" auger, 12 ft. long is used to put the supplement into a bin that feeds a metering device. Three meters, one for each of the three ingredients are used to proportion out the material. These meters work on a volume basis. A 5-inch canvas belt carries the grain under an adjustable gate that does the measuring. After metering, a 4-inch horizontal auger blends the mixture and moves it to the mill for further processing.

Hammer Mill is Heart of System

The actual grinding is done by a hammer mill powered by a 5 hp motor. The capacity of this system is controlled by adjusting the rate of feed to run the motor at its rated amperage input as indicated by an ammeter.

Pushing this button does most of the work in preparing 600 tons of feed per year on the Lavy farm. The system is so controlled that blending equipment cannot operate unless hammer mill is running.



Adjustable gates on each storage bin are used to meter ingredient onto moving belt which carries mixed ingredients to hammer mill. No manual handling or lifting of the feed is required. The augers and conveyors move it with very little power.

Another adjustable gate permits feeding of hammer mill at full capacity as determined by proper amperage on ammeter near push button switch shown on preceding page. A magnet in this feedor collects any tramp metal before it enters mill.

Lavy estimates that he saves about $7.00 per ton in processing costs and on the purchase of supplement plus all the time formerly spent on the road hauling to and from the mill. With all ingredients stored in bins ready to go, the grinding is frequently done in the evening while they are working around the buildings. The processed feed is held in a self-unloading wagon for delivery to feeders.

Augers Complete Mechanization

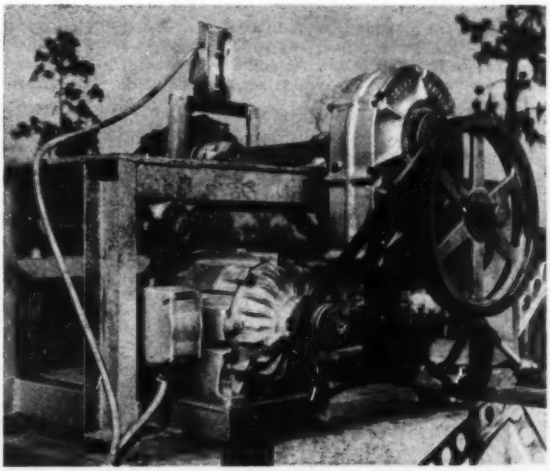
Satisfaction with the equipment can be expressed by the fact that the second unit is in operation on another farm. Complete mechanization of the original installation is accomplished by filling the bins with an electric powered auger. The second installation delivers feed direct to feeders with the mill blower. □ □

COVER ILLUSTRATION

The Norris Cattle Ranch of Ocala, Florida specializes in breeding and raising Brahman cattle. Such show cattle must be halter broken. Doing this manually requires a great deal of time and labor.

They solved their problem by devising a mechanical halter breaking machine as shown on our cover. This device, powered by a 7½ hp electric motor and gear reduction unit, can be adjusted to walk the cattle at any desired pace. It handles 21 cattle at one time. They are led 200 feet in one direction, then the device reverses itself and leads the cattle 200 feet in the opposite direction.

Byron Johnson, assistant manager of the farm, estimates that the device does the work of at least 10 men at one time. The operator merely stands by and oversees the operation. The unit has ample power to drag along even the balkiest of bulls. Can you feature any easier way to exercise a bull?



Back side close-up of driving mechanism. Gear reduction unit drives sprocket over which chain passes. Cattle are tied to cable fastened to driven chain. Trigger on chain reverses motor automatically.

Low cost lighting at the G. Winkler & Sons farm, Zillah, Ore., makes feeding easier when daylight hours are few. It also affords protection against prowlers. A time switch controls the seven flood lights spaced around feed lot.

This overhead lighting fixture is a mighty good investment. Low in cost, it makes chores easier and helps prevent after-dark accidents.

How to Light Outdoor Work Areas . . .

By **J. P. DITCHMAN** & **J. L. TUGMAN**

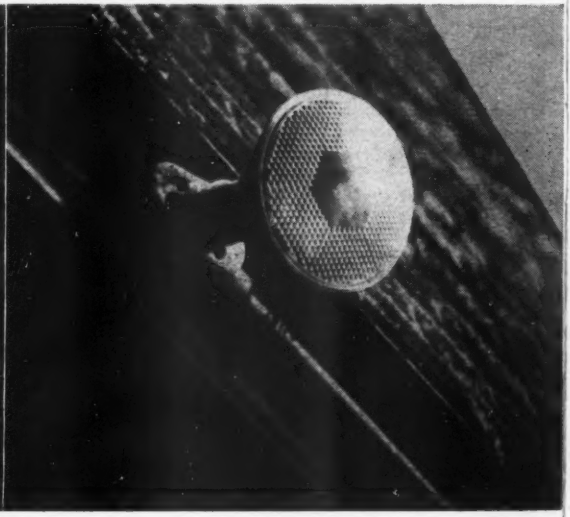
These illustrations show some generally used yard lighting practices around farm buildings. Where work is done after dark, an ample amount of light, properly placed, will make that work both easier and safer.

Night in rural areas can be very dark. When people move from the comparative brightness of indoor conditions to the darkness of the outdoors, the eyes must make a large adjustment very rapidly. During this period of adaptation, the human eye efficiency is very low. The time required to make the adjustment varies with different individuals, but all require a certain period of time. This transition can be made relatively free from hazard by supplying outdoor lighting so as to maintain good vision as we proceed from indoors to outdoor areas.

Planned flexibility should be provided for when planning yard lighting. By planned flexibility is meant enough light to meet a broadening range of activities carried on

The benefits of yard lighting are lost if proper control switches are not used. Three or four-way switches should be used to give control at points of entry to and exit from areas to be lighted. Low voltage control systems may also be used.

Outdoor type lamps such as this 150-watt PAR flood or the 150-watt PAR spot lamp can be used outdoors in weather-proof sockets without further protection. Regular indoor lamps must be protected with a weather-proof reflector.



A utility flood light over garage door and a decorative post lamp near the house is a combination that lights all walk areas. No danger of stumbling in the dark here.

One or two poles with clusters of three 300-watt flood lamps makes possible after dark sports such as croquet, badminton, or horseshoe.

in the areas between buildings. Thus a 200, 300, or 500-watt lamp in a spread reflector mounted 14 to 18 feet high above the ground will furnish ample light for walking and for simple tasks. But the spread of light becomes too thin for many detail tasks. More intense lighting for such tasks can be furnished by using clusters of 150-watt PAR flood or spot lamps. Special attention should be given to driveways and to building approaches.

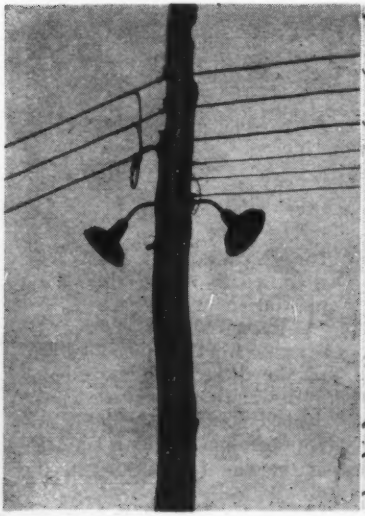
Many farmers find the need for specialized night lighting such as livestock feeding areas. The same equipment as is used for general yard lighting will do the job here as well. Since the area required to be lighted may be large or may require a different pattern of lighting, additional poles and lighting units are often needed.

Outdoor lighting also suggests an opportunity for the use of recreational facilities after dark. Young people may want to toss a baseball, play badminton or croquet, or practice shooting baskets. Mother may wish to use lighting for a late evening picnic or for displaying her flowers. All lend themselves to appropriately selected and installed outdoor lighting units.

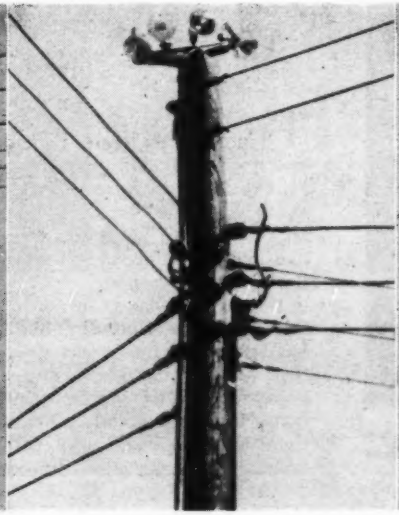
The maximum benefit can be realized from yard lighting only if proper controls are provided. You should be able to turn lights on or off from different points such as the barn and the house. Many farm people find it desirable to use their yard lighting throughout the evening hours so control it automatically with a time clock control. Others have found that a master switch in the house also makes the lights useful for protection against prowlers or predatory animals.

Good yard lighting, properly planned and controlled, makes chores easier, safer and more pleasant for the worker. And it gives the entire farmstead an air of friendly hospitality at night. □ □

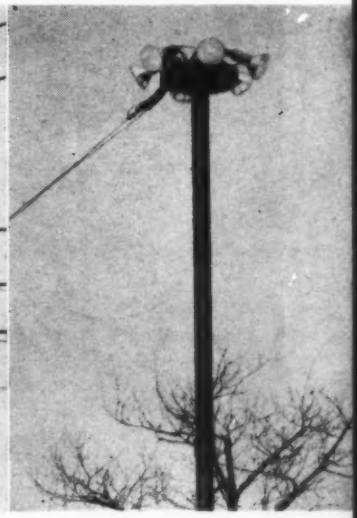
Good installation. These two 500-watt lamps in RLM domes offer two-way light coverage at a very reasonable cost. Lamps are easy to service.

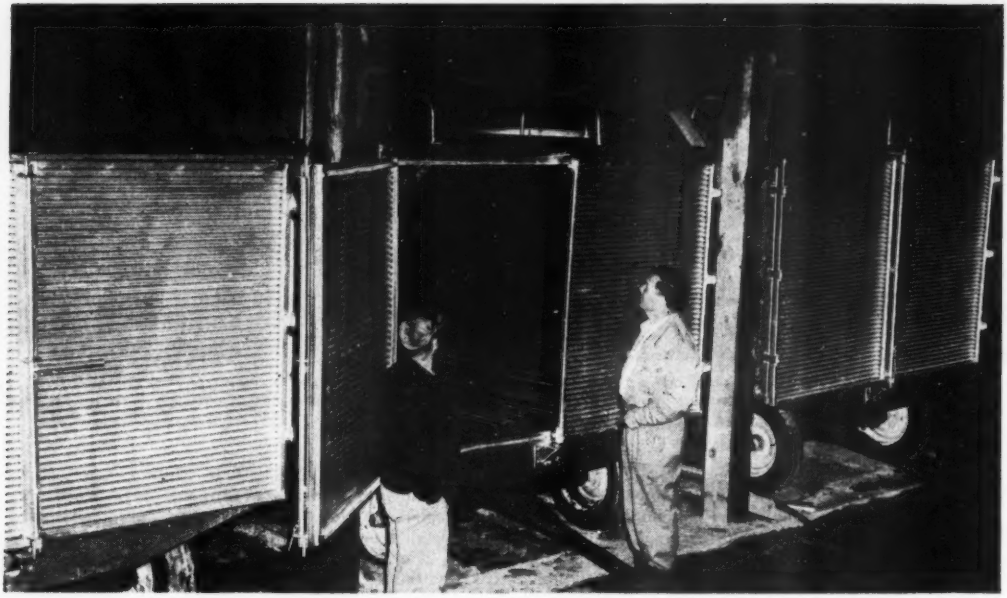


Hazardous installation. Light coverage is good but mounting of lamps above wires makes servicing hazardous and should be avoided.



This battery of six 150-watt PAR floodlamps gives good light coverage over a large area. Separate pole eliminates dangers from wires when servicing.





Howland Farms uses a four-wagon down draft drying system. Air is distributed to each wagon through an overhead plenum chamber and canvas curtains. Special wagons with airtight sides and perforated floors are used.

Wagon Driers Make Quality Hay

This 5 hp heated air crop drier furnishes the necessary air for drying four wagon loads of bales at one time.

Batch system offers flexibility needed to fit drying needs regardless of weather

By RALPH J. BUGBEE

Top quality roughage is undoubtedly the secret behind the four national production records recently made by animals in our herd." These are the words of Joe Beane, farm manager of Howland Farms, Brattleboro, Vermont.

Weston Howland, owner of this top-notch Guernsey herd, has introduced many new practices on his farm. He is always keenly interested in promoting better farming methods. One of these practices, and one with which he is especially pleased, is his batch hay drying set-up.

Howland Farms uses a down draft type batch drier to handle baled grass forages. A drive-through wagon shed is used. Heated air, furnished by a 750,000 b.t.u. oil fired drier, is carried through a distribution plenum chamber located in the "A" frame roof of the shed. Air is forced from this plenum chamber downward through the hay.

Howland follows a definite management practice in his haying operation. Grass is cut early in the morning as soon as the

dew is off. It is worked with a side delivery rake until the moisture content is down to 50%. This is usually mid-afternoon. Then it is baled. Bales are stacked on the drying wagons. Each wagon holds 120 bales piled 4 deep. The drying process is started about 6 p.m.

15 Hours Dries Normal Batch

Under normal drying conditions, hay is dry and ready for permanent storage by 9 a.m. the following morning. Heat is used for 14 hours of drying with only the fan operating the last hour. In emergencies, when unexpected showers come along, hay is put in the drier at as high as 70% moisture content. About 24 hours is required to dry this hay.

Howland estimates that the investment in his entire drying setup totals about $5000. This includes 4 wagons, a heated crop drier, and the wagon shed. Curing costs run about as follows: Kerosene (at 17c per gallon), $1.79 per ton of cured hay; Electricity (at 2½ per KWHr), $.21 per ton; for a total operating cost of $2.00 per ton. Depreciation (figured on 10-year basis, interest on investment at 5%) amounts to $750 per year. Howland cures 100 tons of hay annually. Therefore, depreciation accounts for $7.50 per ton.

"While this calculated cost of $9.50 per ton, including both operating and depreciation expenses, seems high at first glance, it makes possible lower grain costs. We don't use higher than 14% fitting rations with the high quality type of hay our drier produces. Our hay has tested 19% protein on second cuttings and 21% on third. We use Brome, Alfalfa and clovers and the hay all rates high grade mixed. With 16% grain rations at $72.00 per ton in our area, this high quality hay soon makes $9.50 per ton seem low in comparison." Such are the opinions of the man who is qualified to know. He has four national production records for Guernseys as proof. Besides he has had many years experience with several different types of hay drying systems.

And his batch dried hay is really a beautiful product. Ask any cow who has had a chance to taste it! □ □

Wiring Problems?

How do you know when you have a wiring problem? Here are four symptoms:

1. Lights flicker noticeably when electric motors start.
2. Television picture shrinks when you turn on other appliances.
3. Fifteen-amp fuses blow on regular circuits.
4. You get electrical shocks, not caused by static, from metal parts or switches.

If you find any of these symptoms, call on a reliable electrician to help correct them.

Turbine irrigation pump on a farm in western Nebraska is driven by a rugged 10 H.P. Century "Farm Tested" Motor.

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And you'll find this same stamina in Century motors for other jobs around the farm. You can depend on them to bring out the best performance in pumps of all kinds, blowers, grinders, compressors and other types of equipment. If your dealer does not have the Century "Farm Tested" Motor you need, show him this ad and ask him to write us immediately.

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Waste water from a farm produce processing plant is utilized to advantage on this pasture used for 70 head of Holstein milkers. Lightweight aluminum pipes with sprinkler heads insure uniform water distribution with a minimum of work and effort.

Waste Water Leads to Green Pastures

Planned irrigation means more luxuriant forages in late autumn

By C. A. PERRY

Waste not, want not is a familiar old saying. But a northwestern Ohio farmer is actually practicing it. He is irrigating his pastures with water that would otherwise be wasted.

Sprinkler System Used

In 1950, Luther Grieser, who operates the Plain View farm in Hancock County, erected a dairy processing plant. The plant handles milk produced on his and neighboring farms. It uses about 10,000 gallons of water daily. This water must be disposed of after it is used. Luther felt that this water could be used for irrigating pastures to good advantage.

Local health authorities approved his plans for the construction of a holding cistern large enough to hold a one-day accumulation of waste water. He then constructed a pump house adjacent to the cistern in which is housed a 5 hp motor and centrifugal pump. This pump pushes 60 gallons of water per minute under 60 pounds of pressure through three-inch water lines to the pastures. Here, sprinklers are set up with 60-foot spacings to distribute the water evenly and uniformly.

The system is operated during the late afternoon of each day to utilize waste water of the previous evening and morning's processing operations.

Grieser establishes a pasture area of about 10 acres each year to be irrigated with the waste water. A mixture of Brome, Timothy, Alsike Clover and Alfalfa is planted with 250 pounds of 0-20-20 commercial fertilizer to insure luxuriant growth. Due to the detergents used in the cleaning, cattle usually wait 2 to 3 days after the sprinkling operation before they eat the grass. This delay permits plant growth and allows the ground to dry, thus preventing damage by tramping. No harm to the grass

This 5 hp electric motor drives the centrifugal pump used to move water from Grieser's storage cistern to sprinklers.

has been detected due to the detergents or milk solids in the sprinkling water.

Builds Up Soil Moisture

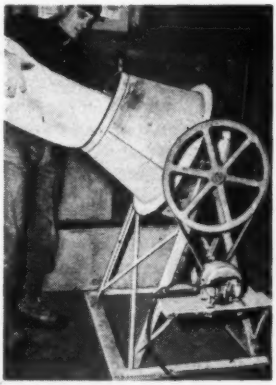
Grieser's irrigation goes on during winter months as well as summer months. He follows a plan so as to prevent soil erosion and to build up soil water supply.

Grieser finds that the irrigated areas can be pastured at full capacity until late fall. This practice materially reduces the amount of hay required.

Grieser is only one of several Ohio farmers who have made arrangements to irrigate with waste water from some form of processing. Canning factories often provide ample water for irrigation during dry summer and fall periods. Why not investigate such possibilities near your own farm? Maybe you have a source of irrigation water within reach that can be used economically on your pastures or fields. □ □

Grain Inoculation

M. E. Hickenbottom of Fairfield, Iowa, uses a concrete mixer to inoculate his seed grains. Soybeans, clovers, or alfalfas can be dusted or inoculated much more thoroughly in this manner than by hand.



A ½-hp motor using a V-belt drive runs the mixer. After planting, the same set-up is used for mixing concrete.

A Water System is the Lifeline of Your Farm...

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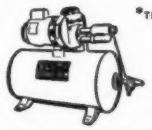

Rapidayton jet pumps have vertical or horizontal tanks

Rapidayton "400," fine piston pump for shallow wells

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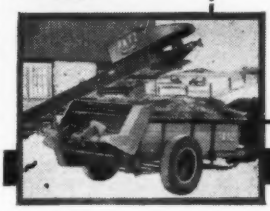

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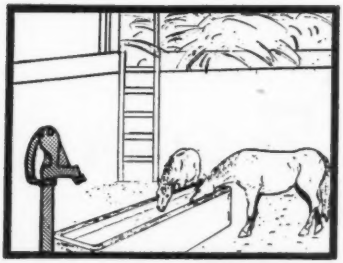

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From Hen to Customer in 24 Hours

Roadside egg dispenser does the selling, all automatically, without an attendant

By W. A. BODWELL

Fifteen years ago Louis Chartrand of Manchester, New Hampshire was spending his working hours in the local shoe shop. Today he owns and operates a one-man poultry business which is unique in that he not only has his grain delivered automatically, but he also merchandises his eggs automatically.

From a humble beginning of 500 chickens and practically no buildings, Chartrand now has a capacity for 6,000 birds with 4,500 laying hens now in production. He has accomplished all this through hard work, ingenuity, and a big assist by electricity.

Like all other up-to-date poultry farms, he is using electric power for many operations. Feed is carried to storage by conveyors. Automatic feeders deliver the grain to laying hens. Lights, as well as feeders, are controlled by time clocks. Litter is removed from the pens with a conveyor. Chicks are brooded and eggs are graded, candled, and cooled, all by electricity.

However, Chartrand's big difference from other poultry farms is his automatic merchandising equipment. He uses a completely automatic and unattended egg-dispensing machine housed in a building located on heavily-travelled Route 101 in New Hampshire. Drive-off parking area is provided for customers to stop safely and conveniently at any hour of the day or night.

The egg dispenser offers a choice of medium, large, or extra large eggs. By placing 75¢ in coins in the slots, the cartoned eggs plus any change due the customer come out automatically.

Uses Proper Refrigeration

The egg dispenser building is 10 ft. by 6 ft. by 8 ft. and is completely insulated. Inside temperatures of 50°F. and proper humidity of over 70 percent are maintained by use of a ¾ ton egg room conditioner unit. "From the hen to you in 24 hours" is Chartrand's slogan. The combination of top quality eggs and proper refrigeration and storage conditions insures his customers of fresh, high quality eggs every day.

Chartrand placed this unit in operation in July, 1954. He found immediate success with it as a way of marketing his products without hiring extra labor. Now it is even more satisfactory as he has established a long list of regular customers and new ones are being added all the time. It has really "caught on".

"Without electricity, we would be unable to operate" says Chartrand. And we are certainly inclined to agree with him. □ □

Grand Champion Hay Entry

Maryland farmer takes top honors in N.E. Hay Drying Association competition

Francis Ginn, owner of the Aux La Chapelle Farms, Dickerson, Md., produced hay that won out over 53 other entries at the annual show held recently. Their entry was late cut alfalfa cured on a 4-wagon drying unit using heated air.

The Aux La Chapelle Farms produced 425 tons of hay in 1956. They farm 300 acres and maintain a herd of 150 Guernseys. Last year the herd averaged over 10,000 pounds of milk per animal and 500 pounds of fat on a twice-a-day schedule. Andy Sheppard, farm manager, attributes their high production to the following factors: (1) Top quality livestock, (2) Balanced feeding program with quality products, and (3) A good spray program. They feed their top quality alfalfa "Free choice" and find that the animals ate a daily average of 43 pounds of hay per head during the indoor feeding season. Grain is fed at the rate of one pound per day for each six pounds of milk produced. No silage is used.

The reserve grand champion prize went to Ideal Farms, Augusta, N. J. for their entry of late cut Alfalfa Grass Mix. Blue ribbon winners in other classes were as follows: Alfalfa, first cutting, John Kolback, Hamburg, Pa.; Alfalfa Grass Mixed, first cutting, Hominy Hill Farms, Freehold, N. J.; Clover, first cutting, Erdenheim Farms, Lafayette Hills, Pa.; Clover, late cutting and Clover Grass Mixed, first cutting, Newton F. Moyer, Telford, Pa.; and Clover Grass Mixed, late cutting, Brookside Farm, Whitemarsh, Pa.

Andrew V. Sheppard received the Grand Champion cup and plaque from Frank O. Polmatier (right), president of the association. The travelling cup goes to the winner's home state university and the plaque is his to keep.

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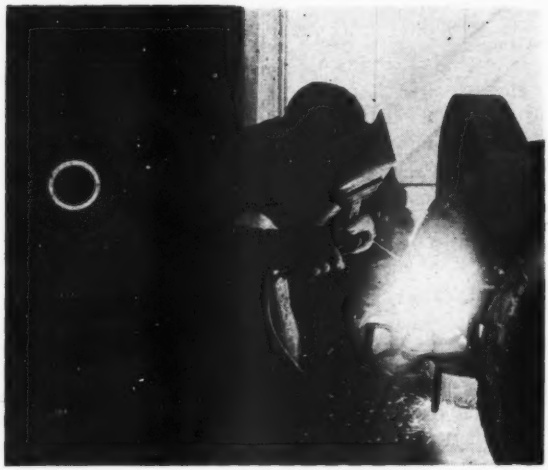


Proper equipment and accessories, used correctly, make the farm welder a servicing tool that is a real "Helping Hand" around the shop.

How to Select and Use Your Welder

These users' experiences can help you realize the greatest service from your unit

By RUSS KANIUKA

Like thousands of today's modern power farmers, Albert Pysson of Orion, Illinois, uses the repair magic of arc welding to keep his farm machinery going. In fact, Pysson declares, "With all the equipment I've got to keep in working condition, I don't see how I could continue to farm without a welder."

Features To Look For

Pysson owns a 180 ampere AC welder. It operates on a 230-volt circuit. It also conforms to National Electrical Manufacturers' Association (NEMA) standards and is listed by Underwriters Laboratories.

Pysson likes the extra features that many farm welders provide, particularly the arc booster. This device supplies a powerful surge of current the instant the welding rod is touched to the metal, making arc-striking easy. Another feature he prizes is the low voltage correction switch which comes in handy when the line voltage is low. By flipping the switch into the low position, he gets the welder's full output, in spite of decreased voltage. A welder should be on wheels, Pysson advises, so it can be rolled to various job locations in the shop.

The usefulness of Pysson's

welder was increased when he bought a carbon arc torch. Now he can braze, heat metal for shaping and bending, preheat carbon steel before welding, hardsurface cultivator shovels and do many other jobs that would ordinarily require a gas torch.

Select Proper Welding Rod Types

Welding rod selection is not a problem. Pysson finds that he can do 95% of all his welding with just two rods—the E-6013 and E-6011 mild steel types. These numbers are not brands but are class designations established by the American Welding Society. They appear on welding rod packages along with the brand name.

Type E-6013 is most used, but has two drawbacks. This type is not at its best on rusty or galvanized material. And while it is useful for overhead and vertical welding, its heavy slag causes molten weld metal to run and form "icicles."

Type E-6011 is a good answer to these problems. This rod's specially designed coating creates a forceful arc that really digs away rust and galvanized particles. "Icicles" disappear from your out-of-position welding since E-6011 leaves almost no slag, allowing the weld metal to "freeze" or solidify quickly. This fast freezing quality also makes welding of poor fit-ups easier. Increase the arc length when using E-6011.

The other rods Pysson stocks are few. They include a nickel base rod for welding cast iron or cast to steel, and a hardsurfacing rod to increase wear resistence to impact and abrasion. He suggests that you tell your dealer you own a farm welder when buying rods, so he doesn't sell you the industrial kind.

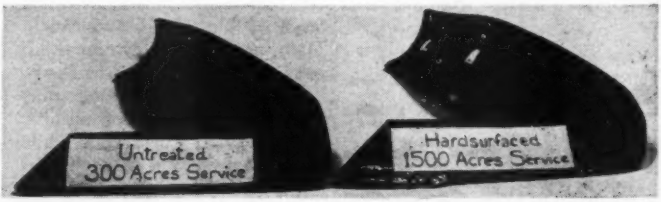
Hardsurfacing With A Welder

Farmers are finding that an arc welder can save time and money in several ways. Every day welders are used for purposes other than routine mild-steel repairs.

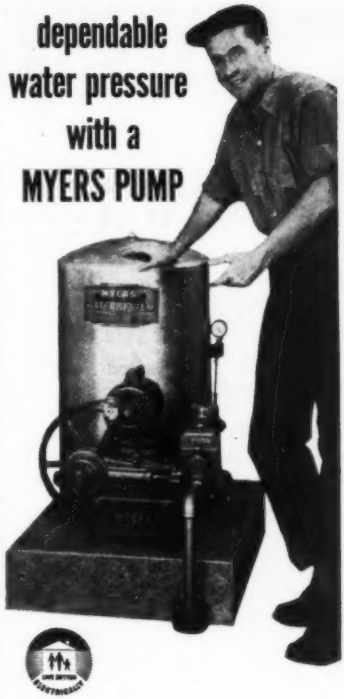
Don Kirkpatrick, who farms near Roseville, Illinois, gets five times more wear from his cultivator sweeps after hardsurfacing them with a chromium-carbide powder. A pound costs only $1.75 and is sufficient to treat about 20 sweeps.

The first step in hardsurfacing a sweep is to thoroughly grind the bottom leading edge to bright new metal for a distance of ¾" in from the edge. Do this even if the sweep is new. Now position the sweep upside down, sloping from the heel to the toe and with the cutting edge low. Such positioning permits the hardsurfacing material to flow out to the edge. A 2" 'C' clamp welded to a 5/16" rod makes an ideal jig that can be held in a vise.

Mix a little hardsurfacing powder with a small amount of water . . . just enough to make a paste the consistency of apple butter. With a putty-knife spread the paste about ¾" wide and 1/16" thick along the edge to be treated. Tap the sweep gently to settle the carbide particles and to bring excess water to the surface. Connect an arc torch accessory and set the current at



Results of a wear comparison test on the Don Kirkpatrick farm at Roseville, Illinois. The hardsurfaced sweep's blade was wider than the untreated, despite longer use.



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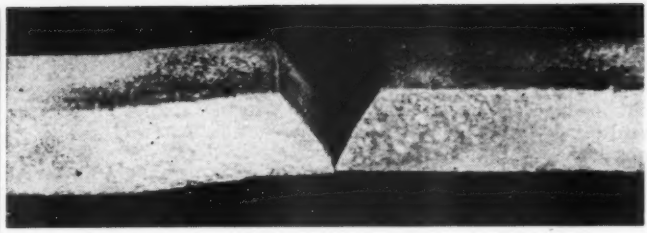

A broken cast iron brace properly ground and positioned for welding.

45 amperes, although up to 65 amperes may be required if the line voltage is low.

Working from the heel to the toe, preheat a small area of bare metal near the paste. Proceed only when the metal begins to "sweat" or glisten. Now direct heat to the inside edge of the paste. When a glistening puddle has formed, quickly weave it out to the sweep's edge, being careful to keep the outside carbon pointed to the sweep, not the edge. Repeat this technique until the entire edge is finished. Let the sweep cool slowly, then reposition it and do the other edge the same way. Wire brush the sweep and it's ready for use. You'll find that it'll outlast untreated sweeps 3 to 7 times.

How To Weld Cast Iron

Another farm welding job is repairing broken castings—a ticklish job if ordinary methods are attempted. Cast iron welding is relatively simple if the joint is correctly prepared and a low temperature technique is used.

First, remove any oil or grease by burning it out with an arc torch. Then grind the job by "veeing out" along the broken edges until a "V" joint of about 60° is produced. A joint of this shape will accept enough weld metal to be strong, but an oversized joint will receive too much metal, overheating the casting and probably cracking. Leave about $\frac{1}{32}$" of the original metal in the bottom of the vee to permit repositioning before welding.

Select a ⅛" nickel-type welding rod for cast iron. Use just enough current to weld the casting without overheating it . . . or about 80 to 90 amperes. Tip the rod 15° in the direction of travel, weaving slightly and holding an arc length of about ⅛". Run short beads—not more than 1½" to 2" long. Continue welding after the previous bead is cool enough to touch with the bare hand. "Weld little and cool much" is good advice. When finished, cover the casting with lime or wood ashes and let cool slowly.

And don't be afraid to weld crack-sensitive carbon steel. Grind it just as you would cast iron. Then preheat it with an arc torch to a temperature of 400° F—or the point at which 50-50 solder begins to melt. Then weld as you would mild-steel with either E-6011 or E-6013 rods. Some cracks may develop, but are not usually serious. Weld over them while they're hot enough to remelt.

Farm welders pay off most when they're used to tackle a wide variety of jobs. □ □

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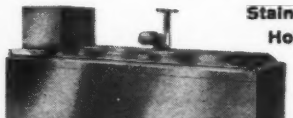

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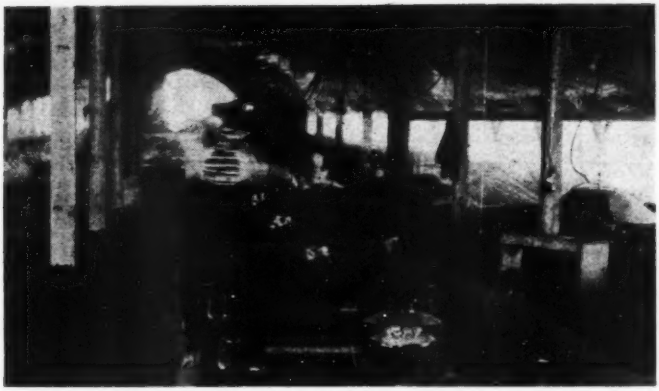


Turkeys on the Kellar Turkey Farm start their lives in a brooder building with economical plastic film walls. These same turkeys will end up on the market—once again wrapped up in plastic.

Turkeys in Plastic From Beginning to End

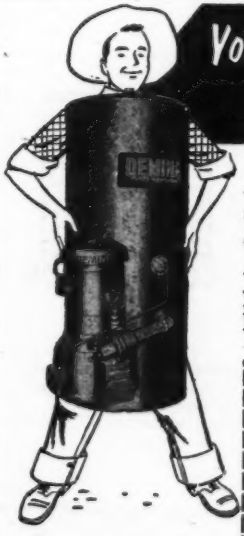
The Kellar Turkey Farm of Pueblo, Colorado raises turkey poults with a minimum of capital investment. They do it with a combination of infrared heat lamps and a pole-frame brooder building having plastic film walls.

Lawrence Kellar says, "Plastic is more economical than any other material that might be used to enclose the sides. Furthermore, I can see whats going on outside when I'm inside or vice versa." Aside from these advantages, Kellar finds that the warm sunshine filtering through the plastic curtains reduces his brooding costs considerably. He receives his poults late in May. They are processed and sold locally for Thanksgiving and Christmas markets.

Kellar's brooding house is a large pole-frame building with polyethylene film hung as side walls. Inside these walls he fences off poults into 175 to 200-bird groups. Each of these groups is brooded under four red glass infrared heat lamp clusters for the first ten days. Thereafter, all have free run.

Infrared brooding appeals to Kellar for several reasons. He can always view his poults without lifting hovers or stooping to look underneath. Original cost of infrared units is low. Storage after the brooding season is simple. There are no maintenance problems or repairs to worry about. And probably the most important of the benefits from this type of brooding is the complete absence of annoying fumes and moisture problems created by fuel-burning brooders.

Last year Kellar brooded 5000 turkey poults in this plastic house with infrared lamps. The operation was so successful that this year he plans to add even more infrared lamp units. He has found what he believes to be the most economical combination possible for handling his poults and still obtain fast feathering and growth. ERVIN G. SCHIESL



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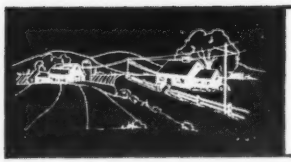


Electricity in
THE FARM HOME
EDITED By ELINOR CASAVECCHIA

Freezing Facts From Farm Femmes

Virginia homemakers subject of field study on home food freezers

By J. H. STRICKLER*

Educators and power suppliers are constantly in need of field information to assist them in preparing programs and teaching materials for farm people. They need this information in order to do the best possible job of helping these people to make more efficient use of their electrical equipment, both farm productive and home appliances.

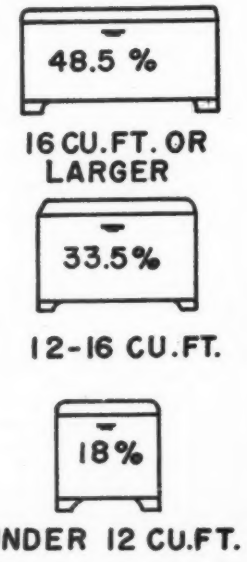
Home freezers have become very common in the homes of rural people during the past decade. Up-to-date information was needed to determine the types of freezers farm people are buying and how they are using them. To obtain such data, the Field Study Committee of the Virginia Farm Electrification Council launched a field study last spring. The purpose of the study was to gather factual information which would enable educational workers to direct their efforts on this appliance in the right direction.

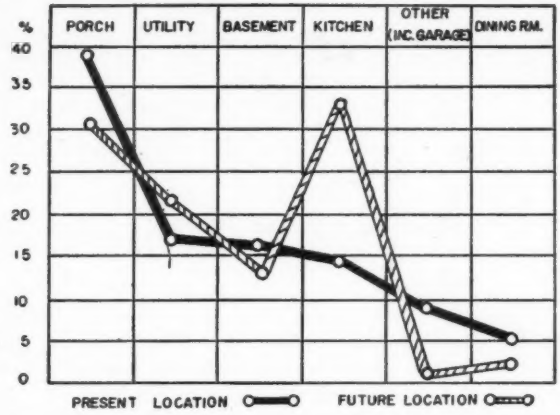
Personal calls were made to 570 freezer owners in 97 different counties of Virginia. Home economics and vocational agriculture teachers, home demonstration agents and power supplier farm and home representatives made the visits and

* *Mr. Strickler is Coordinator of the Virginia Farm Electrification Council at Virginia Polytechnic Institute.*

TYPES OF FREEZERS SURVEYED: Of the freezers surveyed, 81% were chest type, 18% were upright and 1% were combination. The question was asked, "If you replaced your freezer tomorrow, what type would you buy?". 61% of the homemakers would buy chest type, 37.8% would buy uprights. The trend is toward upright freezers, probably because they require less floor space.

SIZES OF FREEZERS SURVEYED: Approximately ½ of the freezers surveyed were 16 cubic feet or larger. When these homemakers replace their freezers 57.2% plan to buy the same size, 40.5% want larger freezers, and 2.3% smaller. The trend is definitely toward larger freezers.





LOCATION OF FREEZERS: The trend for the location of freezers is moving toward the kitchen or in the adjoining room. From the freezer survey, the average homemaker walks some 8½ miles a year taking food to and from the freezer.

filled out a questionnaire for each home visited. The results of these visits show how these homemakers are now using their freezing equipment. It also gives some indication of what experience has taught them and what changes they would like to make when they replace their present freezer, remodel their home, or move to a different home.

We know many of you will be interested in the findings of this survey. Possibly some of the ideas of these 570 Virginia farm homemakers will help you in making certain decisions regarding your own particular problems. The following facts are a compilation resulting from this study.

FAMILY SIZE

The average family size of this group was 4.5 people.

FREEZER DEFROSTING

Over half of the homemakers (54.7%) defrost their freezers only once a year. Many (25.-4%) defrost twice a year. Very few (only 6.2%) defrost oftener than every three months. Time required for defrosting varies from ½ hour to 2 hours or longer. Many stated the average time required to be about one hour.

FREEZER USE INSTRUCTION

98.8% of the women interviewed had referred to their freezer manual for instruction on operation, care, use, maintenance, or freezer recipes. 48% had attended freezer demonstrations.

REPAIR AND SERVICING

Only 20.5% of the homemakers had ever required maintenance service calls. The average cost of repair was $18.61.

FROZEN FOOD RECORDS

Practically all of the homemakers kept some type of record of food stored in order to avoid too much food carryover from season to season. Such records also helped the homemaker in planning meals as she knew exactly what was available.

QUANTITY OF FOOD FROZEN

These Virginia homemakers froze an average of 28 quarts of fruit and vegetables, and 92 pounds of meat for each member of the family.

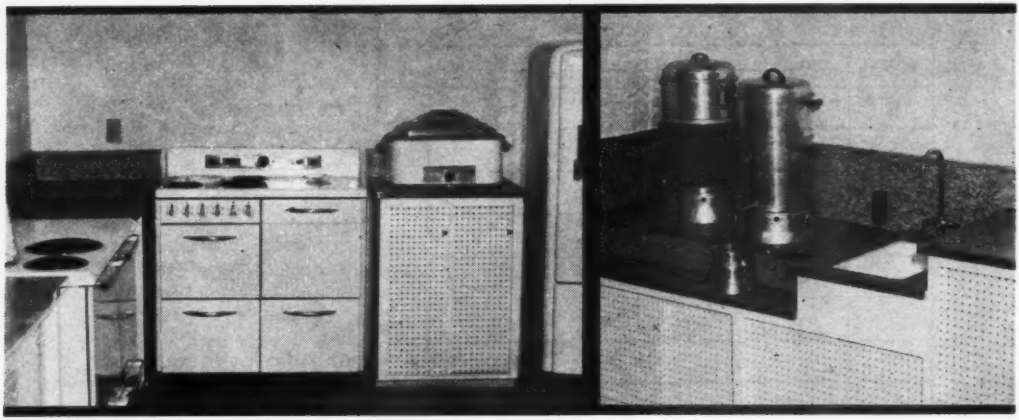
TRENDS

Briefly, these ladies indicated that the freezers they would like in the future would be larger uprights. The reason for this trend is that farm women find it more convenient if the freezer is in the kitchen or adjoining room, rather than at a distant location.

The survey showed that 99.4% of the homemakers surveyed thought that they had made a good investment when they purchased their freezers. Most of the .6% who indicated they were unhappy made very little use of their freezers. □ □

	Meats	*Fruit*	*Vegetables*	*Pastries*
Rigid Plastic Boxes	6	105	35	2
Pliable Plastic Boxes	3	97	41	4
Square Cardboard Boxes	—	101	56	1
Round Plastic Boxes	1	32	8	1
Cardboard Box and Plastic Bag	2	92	175	3
Cardboard Box and Cellophane Bag	—	15	35	—
Glass Jar	—	42	7	—
Plastic Bag—No Box	37	59	179	94
Aluminum Box	—	2	—	8
Aluminum Foil	69	—	2	229
Meat Wrapping Paper	437	—	2	13

FREEZER PACKAGING PREFERRED: This chart indicates the number of the 570 surveyed preferring the various packaging materials for meats, fruits, vegetables, and pastries. Only 38 of the 570 homemakers surveyed reported food spoiled in their freezer. The chief cause of spoilage was improper wrapping.



The most important center in any kitchen is the food preparation center. The kitchen committee of the Methodist Church in Grundy Center, Iowa, chose domestic equipment for their cooking operations. The double-oven electric ranges are placed at right angles. An electric roaster-oven serves as an additional oven for peak loads. Cooks have ample counter space and are safely out of traffic lanes. Heavy containers of hot food are moved by wheel carts to the serving counter.

A domestic refrigerator adjoins the preparation center. Next to the food preparation center is the beverage center. It is equipped with 2 drip-type coffeemakers, an appliance outlet and a small sink. Notice the three level counter which makes it easier and safer to pour boiling water into the coffeemakers. The extra-high faucet on the sink is equipped with a time release so that tall serving pitchers can be filled without holding them. Cups and saucers are stored under the counter.

If you are asked to join the committee, here's how to

Plan a Successful Community Kitchen

By NAN SHAW

A successful kitchen in a community building, school or church starts with a good basic plan. Much thought should be given to this plan before—not after—the work gets underway. As funds become available the work can proceed towards completion. For some groups this might be done in a few months—for others it might require a year or several years. For you, or your neighbor, who might be called on tomorrow to help plan such a kitchen, the following will be a helpful guide.

Drawing Up the Plans

The first committee assignment will involve measuring up the present floor area for dining room and kitchen uses. Draw a scaled plan using ¼ inch to the foot. Include such notations as entrances, windows, utility services, parking area, rest rooms, etc. With a colored pencil scale in any increased space or structural changes which the committee has in mind.

What Equipment is Needed

The amount and type of equipment needed depends upon the menu, the number of people to be served, the type of service, type of group and the time of year the kitchen will be in use. Make a list of all of the annual events the group can expect. Fill in the above information about each event. This list will be helpful in determining equipment purchases, work counter spaces and storage needs.

Prepare a list of all of the things you'd like to get into that kitchen—knowing full well that you'll have to make many compromises and substitutions.

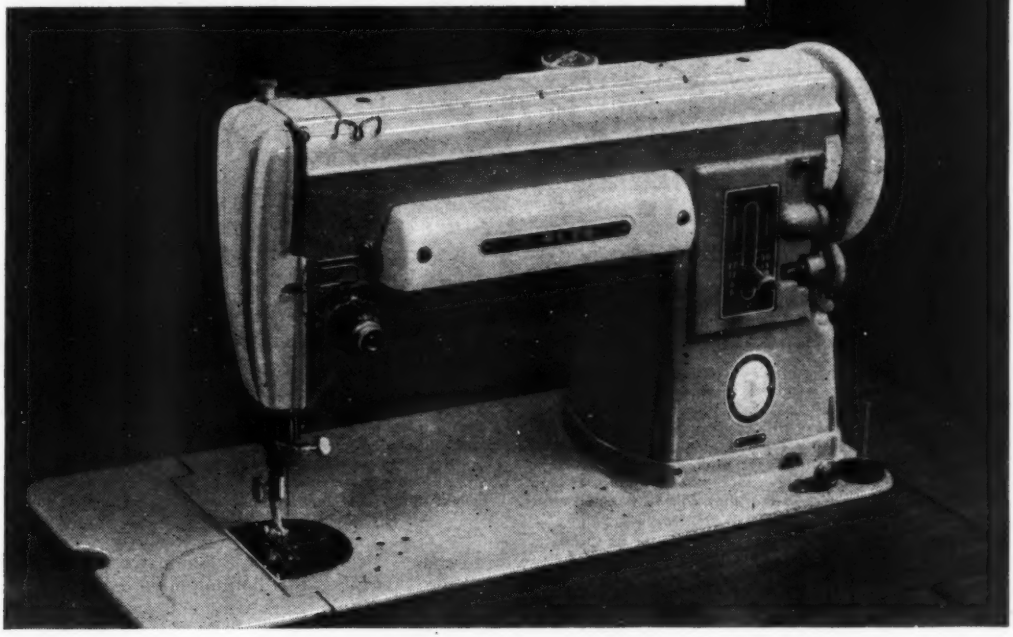
Work Centers

Every kitchen consists of four work centers. These centers are:

- General preparation and cooking
- Beverages
- Serving
- Clean-up

One way of getting more into your meeting is to have each committee member choose one of the four centers in such a kitchen and make out a detailed

Do zigzag stitching *automatically* . . . and save up to $100!



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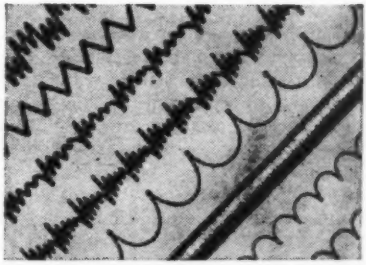

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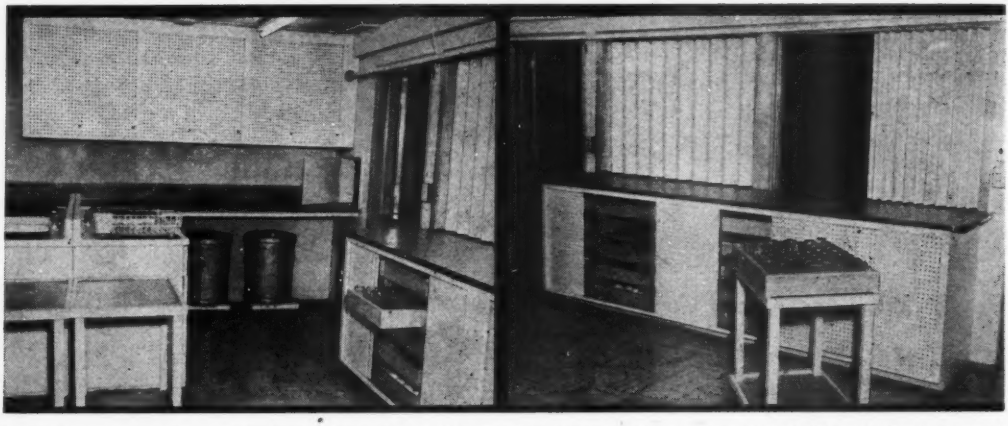

In this clean-up area there are two double-basin sinks, installed back to back. The one on the left is used by the cooks during food preparation. Both sinks are used at the end of the serving period for general dishwashing. In the background is the scraping and stacking counter. Soiled dishes are passed through the pass-through in the wall. Garbage is scraped into cans, and the dishes are stacked for washing. The garbage cans are on casters so that they can be wheeled easily.

The 9-foot serving counter has a folding plastic closure that opens to the dining room during service. Several carts on free-wheeling casters move loaded dish trays from sink to storage area after clean-up, or from storage to dining tables for setting up. Dutch-type doors are a nice way of inviting traffic to stay outside. This Iowa church kitchen also features a switch-controlled ventilating fan, heavy duty mixer, continuous fluorescent lighting and numerous appliance outlets.

plan. Clippings, simple drawings and snapshots would help to add to the interpretation of details for carpenters when the plan is executed. This type of planning makes it possible for more ideas to be exchanged and tested. The final plan is one prepared by the group and not an individual.

Size and Shape

The best shape for a kitchen is a rectangular one that is half again as long as it is wide with the serving opening on the long side. Because of the many volunteer workers it is necessary to have much more space for aisles, as well as counter use, than is required in commercial kitchens with regular employees. Try to keep at least 6 foot clearances between parallel work centers in order to keep the flow of traffic open at all times. The minimum size to start with for feeding 100 to 150 people is approximately 16 by 24 feet. For emergency exit there should be at least two doors from the enclosed kitchen area, with an outside service door nearby.

Do look at the entire floor plan to determine whether or not you'd be wise to change the location of the kitchen. Many times this is by far the most economical way to get the size, shape and related needs best combined.

Wiring and Lighting

The electric service entrance to serve the equipment and lighting should be given the first consideration. To accommodate coffeemakers, roasters, frypans, and numerous other plug-in appliances which might be brought in for special events, such a kitchen should have not less than 4 appliance circuits of number 10 wire with 25 ampere fuses. Duplex outlets should be placed at least 42 inches up from the floor for easy access. The exact location of outlets would depend upon the location of work centers. There should be additional circuits for the refrigerator and freezer, if one is to be used.

A 230 volt service is necessary for wiring heavy duty equipment such as an electric range or water heater.

Lighting fixtures should be off-centered as far as total kitchen floor area is concerned. Shadows are best eliminated by placing the lighting fixtures above the work counters. Keep the lower edge of the fixture at least 7½ feet from the floor. Use light colored counter tops and finishes. The reading on a light meter check-up should read 40 foot candles.

Ventilation

The only sure way to keep volunteers supplied with a constant movement of fresh air is to have mechanical ventilation. Install a quiet operating ventilating fan with at least 3 speeds. Place the fan between the clean-up and cooking centers so the volume of steam and heat will be quickly removed.

In most cases, your electric power supplier will be glad to supply you with professional assistance in planning for your electrical equipment, wiring, lighting and ventilation.

Every public kitchen, for the health and safety of workers and patrons, should comply with the state and local sanitation and fire underwriters codes. The committee should review these before executing any plans. □ □

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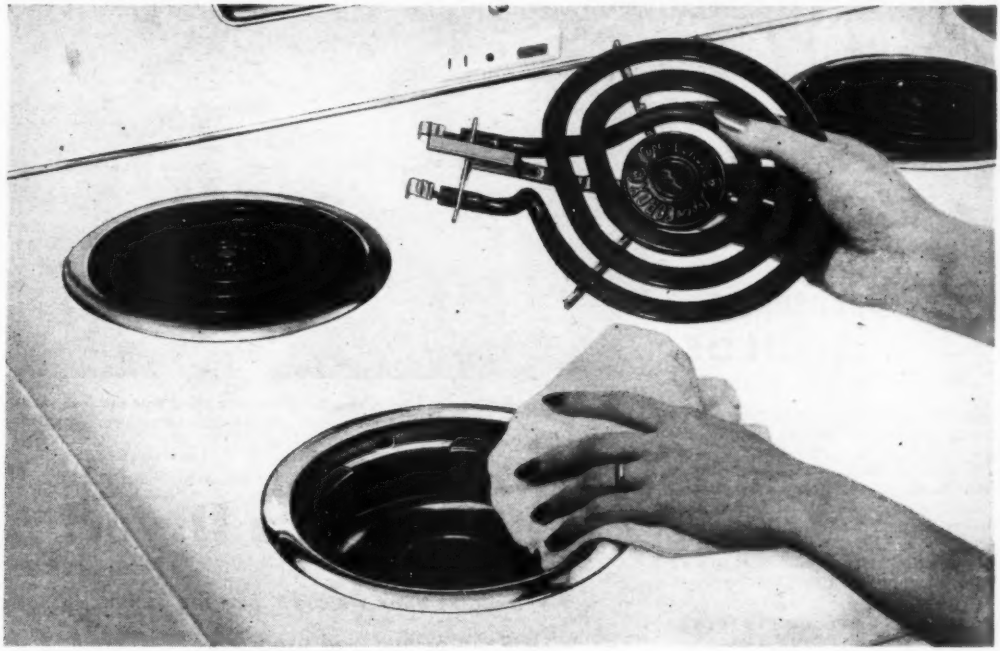

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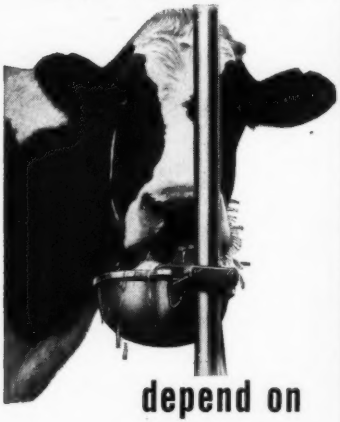

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With five young girls in the family, Mrs. Smith doesn't know how she ever managed to get all the washing done before their electric dryer was installed.

Who Needs a Dryer!

"We didn't think we did," Say the Smiths,
"Until we owned and used one."

By **ELIZABETH KENDALL**

Mrs. Robert Smith, Brownsville, Tennessee, and her family of five girls, have found that an electric dryer is one of the most valuable electrical appliances in their home. Mrs. Smith has had an automatic washer for years, but used the lines for drying and just did not desire an electric dryer. She felt that outdoor drying made the clothes smell fresher and feel fluffier and softer.

The Smith's electric dryer was installed in midsummer when the girls were going swimming at least once each day. Very soon after the dryer was delivered, Mrs. Smith found that the girls were picking through the linen storage for their swim towels, selecting those that had been dried in the dryer. When she told them all the towels were clean, they said they were taking the soft ones for their swims. Mrs. Smith decided to test the towels herself to determine if this was a fancy idea the girls had. She, too, could immediately distinguish from the feel the ones dried in the dryer and the ones dried outside. After this testing experience she dried all of the washings in the dryer.

Mrs. Smith is finding that she needs fewer changes of clothes for three-year-old Connie, who plays a lot outside in the dirt and sand. After each change, the

clothes are washed, then dried, and ready for wear again in less than two hours. This means a savings in clothes purchased. Because Connie is growing so fast, her size changes rapidly. The electric dryer means that she can get more use from her clothes with less money invested in changes.

Georgia Mae, who is in high school, and Bobby Jean, in grammar school, each participate in several of their school sports activities. They found the dryer an answer to their daily needs for fresh gym suits and socks.

Ola Ruth has finished school and is working in Memphis. She comes home for weekends, bringing all of her laundry. Even when she comes in late on Saturday afternoon, she is able to return to her work on Sunday evening with everything clean and fresh, ready for use the next week. All because of the efficiency and speed of the dryer.

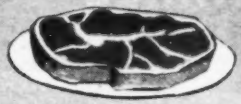
Adds Little to Electric Bill

At first Mr. Smith was a little worried about how much the dryer would increase his electric bill per month. To his delight he found that it added very little and was a great help to his wife. Mrs. Smith suffers each fall and winter from an almost constant attack of colds and asthma, brought on partially from exposure on frequent washdays. This year her attacks have been much less severe and frequent. They attribute part of this to the use of their new dryer unit.

Mrs. Smith says their dryer has helped them to be better neighbors. Sometimes she uses her dryer the entire day helping friends speed up their housecleaning, as well as their regular laundry. Household furnishings, such as drapes and slipcovers, taken down in the morning are back in place in the afternoon. The Smiths say their dryer is one of the electric time savers they did not know would be so valuable until they owned and used it. □ □

Which meat makes the best HAMBURGER?

PACKAGED GROUND



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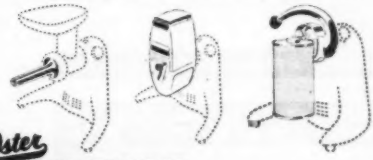

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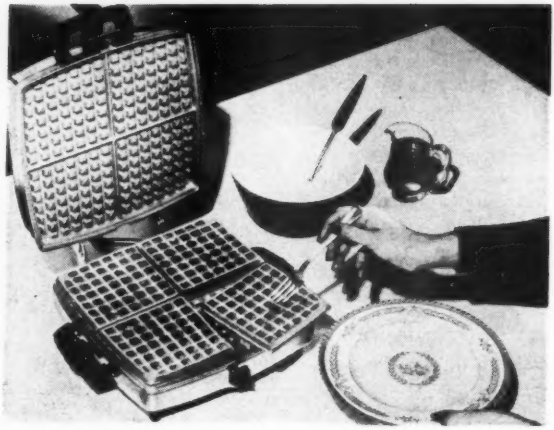

Waffles for a Company Meal

No worries about failures if you use a good recipe and follow manufacturer's directions

A "company meal" that is tasty and satisfying can be planned around waffles. The preparation is simple and the cleanup easy, giving you a chance to relax and really enjoy the guests. By using a reliable waffle recipe, and following the manufacturer's directions to the "T" your worries about failures and sticking will disappear.

If the waffles have a tendency to stick the reason may be that the recipe has too much sugar in it, or not enough shortening. One of the main reasons for sticking, other than recipe ingredients, is that the grid is too hot or too cold. Many of the waffle irons on the market today have thermostats to control the heat more accurately. Carefully follow the directions for preheating. Once the waffle iron is at the right temperature you can help it to stay that way by not allowing it to remain open too long while removing the waffles and pouring batter for the next batch. This cools the grids. When you are through baking, allow iron to cool with grids open.

If you'd like a little variety try adding ½ cup of grated sharp cheese to the batter. Or, try topping plain waffles with "Goo-gum", a mixture of equal parts of honey and whipped cream. Grilled ham, bacon, or sausage links, plenty of hot coffee, and a bowl of tart fruit completes this simple yet tasty "company meal".

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"Water Is The Cheapest Feed"

By **MRS. THELMA McKINLEY**
Savoy, Montana

There is no doubt about it, the most helpful piece of electrical farm equipment my husband ever had installed is a pressure watering system for livestock.

"Water is the cheapest feed," he used to say each winter. Then he would shoulder his ax and hike the half-mile to the river. There he would chop through two feet of ice to open the watering holes for the cattle. In severe weather it was necessary to make the trip twice a day.

It is in the milder winter weather though, that there is real danger for cattle along the river. If the water lowers at that time, the ice will shrink a little from the shore. In such an instance entire herds of cattle have been known to drown.

Due to the inefficiency of this old watering method, and regardless of the quantity and quality of feed consumed, the cattle always lost condition before spring. My husband's "cheapest feed theory" didn't prove itself.

This fall, after nine years of it—he swapped his ax for a tap, you might say. With the pressure system, which operates from a deep well, he installed two watering tanks; one in a shelter for the milk cows, bulls and calves; the other outside for the range stock. Now, with a twist of the wrist, he keeps both tanks brimming.

Our pressure water system has given a brighter look to our future. My husband is free from worry over the welfare of the livestock, and he has much more time for visiting and other favorite pursuits. One of them is figuring the extra profits for the day when we can have a completely electrified farm. Then we will retire from drudgery forever and from the farm—never. □ □

Completely packaged McDonald 4100 Water System—Competitively priced

McDonald Adapto-Jet System

When your water level drops it converts to deep well service in minutes with nothing extra to buy! One simple adjustment and the Adapto-Jet pulls water from further down with just as much pressure as before.

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A.Y. McDONALD
MFG. CO., DUBUQUE, IOWA

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The new dual-purpose Dempster Convert-o-jetmaster water system allows you to change from shallow-well to deep well (down 90 ft.) operation at little cost—*regardless of most water conditions.* Long-life, stuffing box filters out abrasive particles. Removable bronze sleeve stops wear on motor shaft for added years of trouble-free service. Choice of powerful ½ H. P or thrifty ⅓ H. P. motor. Delivers up to 835 gals. per hour.

- Better seal—friction free, more pumping power
- Cost-free conversion—all is furnished except pipe.

See your Dempster Dealer or write

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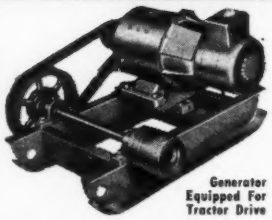

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FOR Junior Partners

4-H Training Strengthened His Desire to Farm

By WALTER L. BAKER, JR.

Donald Anderson of Edwardsville, Alabama always wanted to farm. Maybe that's why he was such a good 4-H'er in his school days. He was also an electrical wizard in school. His talent in that field was shown when he was judged one of the 1950 national winners in Westinghouse's 4-H Farm and Home Electrification Contest.

Donald's success in the electrical field only strengthened his desire to farm. On finishing high school, he worked out an agreement with his father where he almost "took over" the 158-acre farm near Edwardsville. The land had been row cropped for quite a while and Donald knew that it needed building up. He figured that the 158 acres were not quite enough for a really successful beef cattle farm. Besides it would take a lot of money to start raising beef cattle on a scale large enough to supply the major part of the necessary farm income.

So Donald began thinking along the lines of dairying. He completed the installation of a two-stanchion milking parlor on the farm and qualified for Grade A production. He was able to do most of the work on the barn himself, profiting from the knowledge that he had learned in high school while "dabbling" with electricity. Most everything in the dairy barn from the water heater on down is electrically operated and automatic.

But Donald's progress is not

This two-stanchion milking parlor helped Donald to qualify for Grade A production when he started in the dairy business.

going to halt with his succesful conversion to a dairy operation. As time goes on he has visions of increasing the number of purebred stock in his herd so that some day it will be composed entirely of purebred animals. He also has his eyes set on some irrigation to bring his corn yield up to 100 bushels per acre. This irrigation will probably spread over to his pastures and truck crops before many years go by.

It is very gratifying for all of us who worked with Donald back in his 4-H days to see how successful he has become. His application of the ideas we helped teach him give us renewed enthusiasm and confidence in our youth and the projects we help them complete.

Handling 7,000 Bu. Beans Without a Shovel

C. L. Leiffer of Gloucester County, Virginia, handles 7,000 bushels of soybeans in his old two-story broiler house without even a shovel. Electricity does all the work.

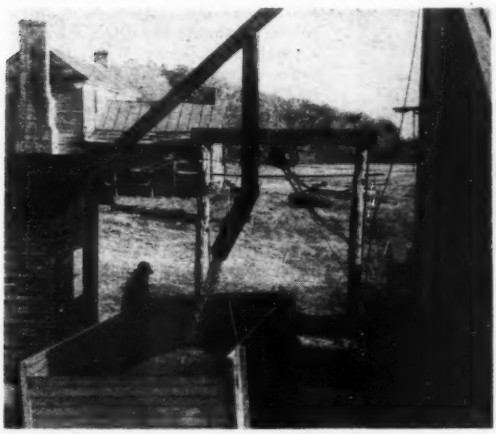
Through an ingenious, homemade system of electrically powered vertical and horizontal elevators, he can fill or empty the house with soybeans, all automatically. If necessary the beans can be run through an oil-fired, forced-air drier, before storage with the same system.

A hoist tilts the wagon. The beans flow into a ¾ hp horizontal screw conveyor set in the ground. An outside vertical bucket elevator, powered by a 1½ hp motor, picks up the beans from the screw conveyor and elevates them to the top of the building. A portable chute inside the building diverts the beans into any desired bin.

If the beans are to be dried, Leiffer swings a diverting valve in the overhead hopper and they flow into the drier house. After drying, they flow from the drier into the same horizontal screw conveyor set in the ground, then to the vertical bucket conveyor and into the main building.

When it's time for the beans to be removed from the storage bins, they flow into another horizontal screw conveyor extending the length of the broiler house floor. This conveyor empties into the same vertical bucket elevator which takes them to the overhead hopper. The beans then flow into the outside slanted pipe and into a truck or wagon.

MALCOLM H. MCVICKAR



Bucket elevator at right lifts beans. For drying they flow to building at left. For filling wagon, they are diverted down vertical chute.

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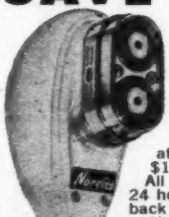

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J. BROOKS, Dept. 509, Box 212, St. Louis 3, Mo.

cleaning seeder with Tank-mobile

"best tool" on farm

William Brown, RR1, Amelia, Ohio, shown above, says: "5 minutes cleaning out our wheat drill with compressed air . . . saves us $50 to $100 in repair bills a year and many hours . . .". Use the *Tankmobile* to grease machinery, spray paint, fog barn with insecticides, inflate tires. Write THE CAMPBELL-HAUSFELD CO., 271 Railroad Ave., Harrison, Ohio, for air compressor catalog, naming your dealer.

CAMPBELL-HAUSFELD

It Pays to..
Grind Your own Stock Feed
BELL "MODERN"
Cut Feeding Costs 20% to 40% and increase the weight of growing Pigs, Hogs, Cattle, Sheep and Poultry.
Grind shelled or ear corn, wheat, oats, alfalfa, soy beans and roughages for as little as ¾ cent per hundred pounds, with BELL'S "MODERN" HAMMER MILL. Electric or Engine power—2 Sizes;—Write for Special Folder and Prices today—
THE C. S. BELL CO. Mfrs.
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the "SOFT WATER" touch
AUTOMATICALLY
Merely set the time clock . . . a Diamond Jr. AUTOMATICALLY backwashers, salts, rinses and returns to service . . . on regular routine. Here's a low cost, COMPLETE, AUTOMATIC 25,000 grain Water Softener guaranteed by nationally known manufacturer that provides Soft Water Service WITHOUT time consuming regeneration. Write
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DIAMOND
AUTOMATICS
Oshkosh Filter and Softener Co.
Oshkosh, Wisconsin

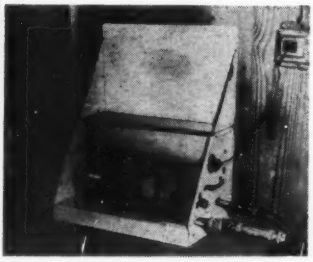
Poultry Drug Dispenser

The introduction of a new automatic drug dispenser has greatly simplified water medication of poultry. By attaching the unit to the water line, it accurately mixes liquid drugs with drinking water.

Many poultrymen prefer the water medication method of treating poultry. Appropriate antibiotics can be added to drinking water for treatment of chronic respiratory disease or bluecomb. Vaccines are introduced into water for Newcastle disease and bronchitis. Various other drugs are also available.

The drug dispenser is attached to the water line at any point. It is regulated by a water pressure of 16 or more pounds. Water enters the device through a standard cut-off valve. It then passes through a pressure control, a water flow valve, strainer and solenoid water control. As water passes through these control units a small electric motor rotates three disk wheels around the inside of a chamber. These wheels squeeze out drugs in direct proportion to the rate of water flow. The solution is thoroughly mixed in a plastic splash tank. From here it flows to the poultry watering troughs.

Besides mechanizing another poultry chore—that of measuring out medicine for treatment of poultry—it has also eliminated



the danger of human error. There is no longer any guesswork, equal dosages of the antibiotic, drug, or disinfectant are added every time.

WILLIAM A. SNYDER

Down our way the local emporium advertises thusly—"To make SURE you're dressed on TIME, buy your clothes on the installment plan." . . . . SODDEN THOUGHT: EVERYONE should learn to drive a CAR, ESPECIALLY those behind STEERING WHEELS. . . . . EVERSTOPTOTHINK?—A POMPADOUR is a hair style that is COMBING back. . . . . OVERHEARD: "She NEVER misses a chance to look in a mirror—EXCEPT when she's pulling out of a parking place!" . . . . OLD-SAW-NEW-TEETH: Old lawyers never die—they just lose their appeal. . . . . Friend of ours complains. Sez he, "After TWENTY years of marriage things are kinda reversed. NOW it's the DOG who brings my slippers and the WIFE who barks at me." . . . . The LAST word in movies—"WHERE is my other shoe?" . . . . When we asked the little-boy-next-door what he learned in physiology class he explained about the stethoscope. "A STETHOSCOPE," said he, "is a sort of a magnifying glass for looking into people's chests with your ears." . . . . JINGLEJOLLY DEPT.: Mary had a little lamb, 'Twas awful dumb and so—IT couldn't tell the RED from GREEN, Nor WHICH was STOP or GO. It followed her to school one day, A silly thing to do, Was caught between the red and green—and NOW it's MUTTON STEW. (Author Unknown). . . . . ALL work and NO play makes JACK—for the PSYCHIATRIST. Even now it's getting so that if you DON'T have a psychiatrist people WILL think you're crazy. . . . . WIT'S END DEPT.: MANY a janitor would RATHER sleep than HEAT. . . . . COLLEGE MIXER: a place where coeds without dates meet men without money. . . . DIET: something you keep putting OFF while you keep putting ON. . . . . TOO many women think EASTER SUNDAY is DECORATION DAY. . . . . Ma Larkey says "Girls will be girls—and so will a lot of middle-aged women at a bridge party." . . . . PARTING THOUGHT: MANY a man goes BROKE trying to bluff with TWO queens. . . . .

Your pun-peddler—DUFFY

In the May

ELECTRICITY ON THE FARM *Magazine*

LOOK FOR PRACTICAL ARTICLES ON

Cleaning and Maintaining Pipeline Milkers

University of Wisconsin engineers outline correct hot water requirements and procedures to be used in caring for pipeline systems

Alfalfa Dehydration

Processing forages electrically —from grinder to dehydration unit to conveyor—solves your drying problem

Greenhouse Cooling

How electric fans and evaporative coolers can condition your greenhouse, permitting healthy plant growth during extremely hot periods

Grain Drying

How, with stand-by grain drying equipment, you can avoid the usual risk in the storage of high-moisture grains

"Do you want to brag about your water system?"

A compilation of several hundred readers' answers to this question provides an enlightening look at pressurized water systems

Outdoor Recreation Area

How a Connecticut family was able to build a swimming pool and recreation area with the aid of adequate lighting

Freezer Use

How to freeze early garden produce in the quickest possible way.

Housewares as Wedding Gifts

Electrical housewares suggestions for the June bride

QUESTIONS AND ANSWERS

Water Pipe Sizes

▶**Question:** *I am going to run a water line from my well to another house 60 rods away. What size pipe should I use? Should it be plastic or galvanized?*

J.F.K., Mich.

▶**Answer:** Assuming a normal home usage of water, we would suggest that you use at least a 1¼ inch pipe and preferably a 1½ inch pipe for this installation. Plastic pipe would be much quicker and more convenient to install. It also offers less resistance to water flow, meaning that you will end up with a higher water pressure at this house.

Proper Voltage

▶**Question:** *Why is it so important to have "good voltage" in our home or our barn?*

G.E.C., Ohio

▶**Answer:** It is assumed that by "good voltage" you mean voltage maintained as close to the nominal rated or ideal voltage level as practical. Generally, the power supplier furnishes power at 115 or 230 volts. This figure may vary plus or minus 5%. Therefore, voltages should seldom fall below 109 or 218 volts.

Most pieces of electrical equipment and appliances are designed to operate on voltages of 115 to 120 or 230 to 240 with design allowances made for slight variations (three to five percent) above or below this figure. Whenever supply voltages vary drastically the

DIAL YOUR WAY TO MORE FARM PROFITS

with

PARAGON TIME SWITCHES

POULTRY ...$20 to $50 more per 100 hens per year ... that's what artificial lighting can do for your laying flocks. It boosts broiler, chick and turkey profits too. Plug-in and conduit-wired models available. Write for special poultry bulletin.

DAIRY ... Paragon has the right switch for batch hot water, milk house heating and ventilation . . . for silo unloaders, feed grinders, etc.

Paragon time switches are also best for yard lights, well pumps, feed-lot lighting — many other uses. Order from dealer, or write for copy, "How time controls save work, time and money on the farm."

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List **$22.50**

110 Volt 60 cycle ac

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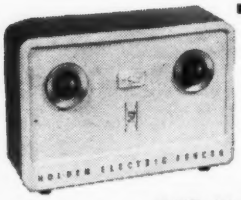
Whenever you need further information about electrical equipment and appliances, you can depend upon the Manufacturers who are advertising in this magazine. We have indexed here for your convenience in alphabetical order the 35 Manufacturers whose advertising is appearing in this April issue.

When writing to these manufacturers be sure to mention you saw their advertising in ELECTRICITY ON THE FARM Magazine.



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✓Non-shorting! ✓2-Lamp signal system identifies trouble *immediately!*

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equipment operation is affected.

Light output from incandescent lamps is reduced with voltage reductions. A 5% voltage decrease reduces light output by 18%. Reduced voltage lowers the starting and running torque of motors and tends to overheat them due to high amperage requirements.

Low voltage is caused by overloading some part of the system. This may be in the farm wiring between the meter and the appliance or it may be due to overloaded power supplier distribution lines. In checking voltages on your system, it is important to remember that the check must be made while equipment is in operation. With some heavy load as a 3 or 5 hp heavily loaded motor operating, the voltage should be checked at the meter pole and at the motor. The difference is the voltage drop in the farm wiring. If it is over 5%, inefficiency can be expected. If the voltage at the meter is too low, the power supplier should be notified.

Just Published

• **"Practical Electrical Wiring"** by H. P. Richter. McGraw-Hill Book Co., Inc., 330 W. 42nd Street, N.Y. 36, N.Y., 602 pages, $6.75. Explains practical methods of electrical wiring, in plain language. Tells how to do all kinds of light and power wiring jobs (under 600 volts) on the farm, in the home and in industry. Presents basic principles in clear, down-to-earth terms. Special attention is given to farm wiring and to emergency standby generation.

• **"Planning a Machinery Storage Layout"** by G. E. Henderson and C. E. Turner, Southern Association of Agricultural Engineering and Vocational Agriculture, Coordinator's Office, Barrow Hall, Athens, Georgia, 24 pages (soft cover), $.60. Contains helpful information for planning, locating, building, arranging and using a machinery storage building. Includes factors to consider relative to wiring and lighting.

Now! The first authoritative guide to INTERIOR DECORATING and GOOD LIGHTING

- **Big seller at $6.75**
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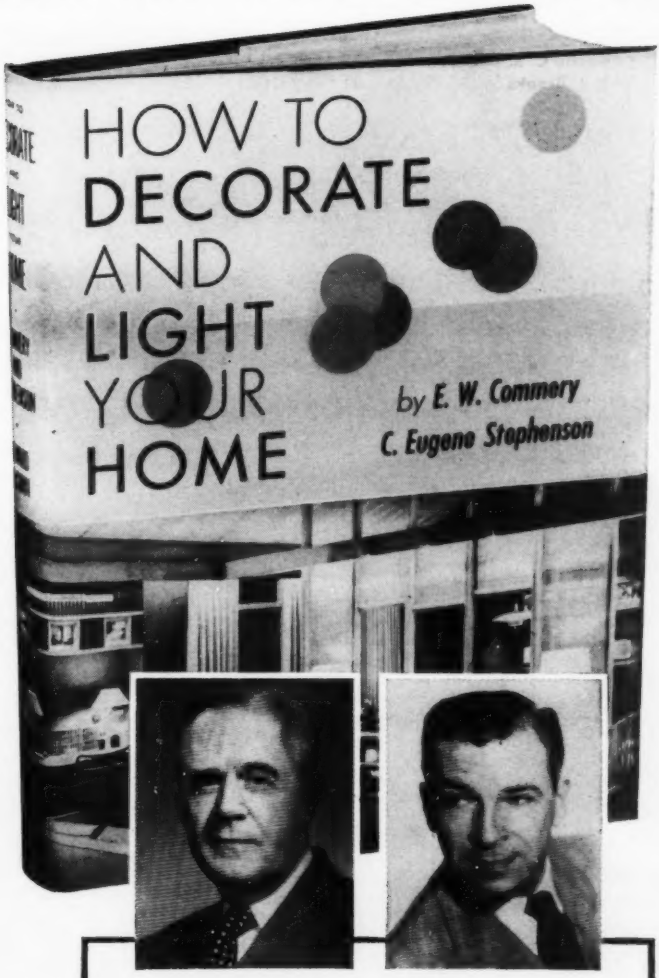

HERE'S the full-color, completely unabridged version of the finest works of E. W. Commery and C. Eugene Stephenson—noted authorities on lighting and interior decorating. This book was a big seller at $6.75—but now you can have a special paper-bound, full-length version for just 35¢.

In it you'll see the newest concepts in interior decorating, featuring lighting as a vital part of your design—inside your home as well as outside. The book shows you 43 ways to group furniture . . . 28 room color schemes . . . how to select and place lamps . . . recipes to turn your kitchen into a well-lighted "family fun" area where good food looks even tastier . . . plus many other articles of interest to the farm homemaker.

Act fast! Fill out the coupon below and mail it, along with 35¢, today!

ABOUT THE AUTHORS: Mr. Commery (*left*), dean of American home lighting experts; in charge of residential lighting for General Electric. Mr. Stephenson (*right*), a nationally known decorator; twice president of American Institute of Interior Decorators.

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Please send me a copy of "How To Decorate And Light Your Home". I'm enclosing 35¢.

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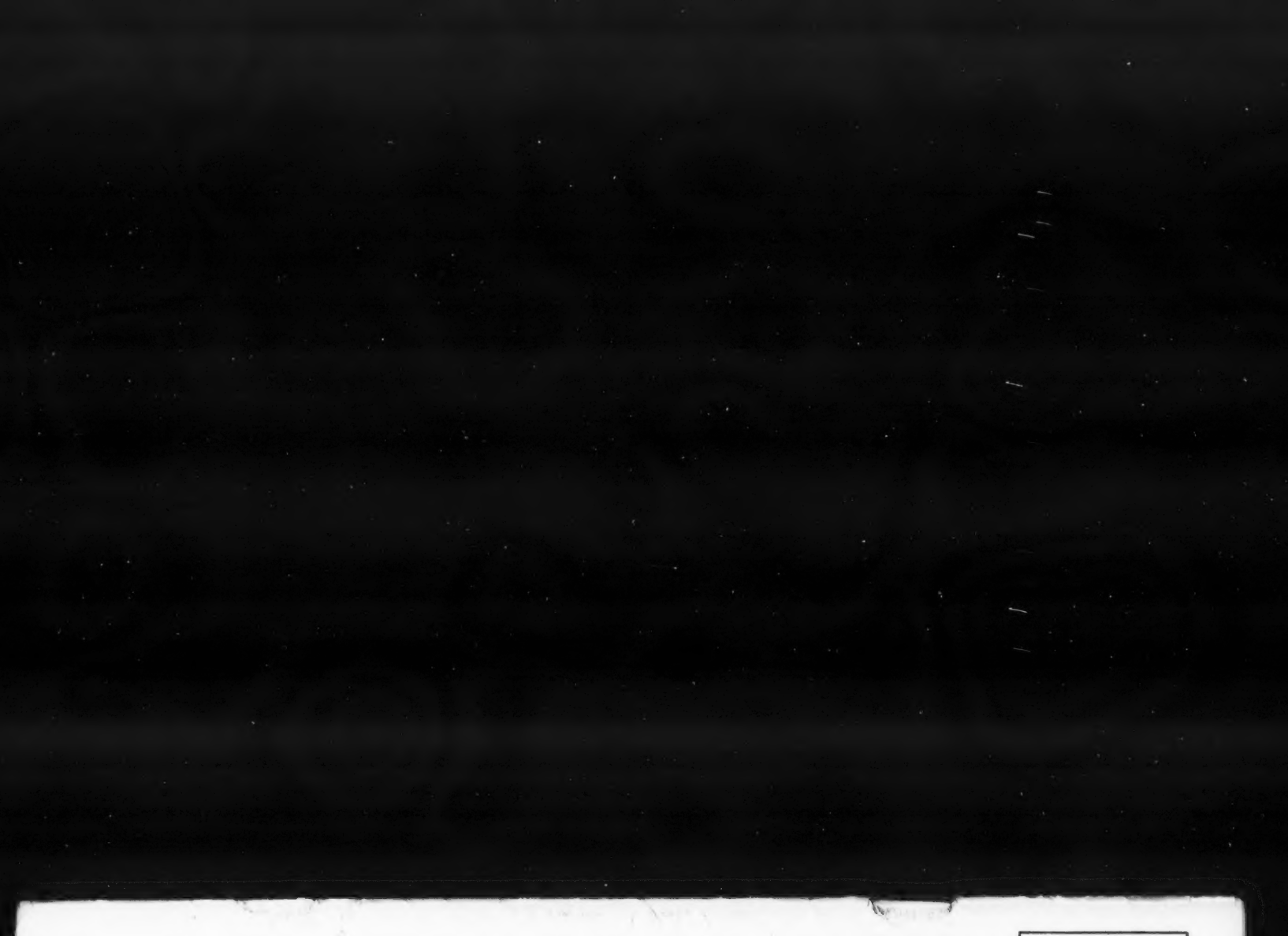
- *Hay stays greener, protein stays up; stock eat more; milk output stays up.*
- *You have more time to raise cover crop after harvesting, more time for fall plowing.*

This magazine is sent to you monthly to help you keep informed of the many ways in which electricity can be used for greater profits and better living.

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